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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,049	03/15/2001	Kris Nyhus	53130/29880	7290

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Kent A. Herink
Davis, Brown, Koehn, Shors & Roberts, P.C.
2500 Financial Center
666 Walnut Street
Des Moines, IA 50309

EXAMINER	
MEHTA, ASHWIN D	

ART UNIT	PAPER NUMBER
1638	6

DATE MAILED: 09/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/811,049	NYHUS, KRIS	
	Examiner	Art Unit	
	Ashwin Mehta	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03/15/01* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The listing for the Coe et al. reference in the IDS submitted 02 July 2001 was lined through, because the bibliographic information was not complete and could not be found in the copy of the reference. Further, the copy of the provided reference was not complete.

Claim Objections

2. Claims 4, 12, 15, and 16 are objected to. In line 1 of the claims, the article "A" should be --The--.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation "G4901" in claims 1, 3, 5, 6, 9, 14, and 17 render the claims and those dependent thereon indefinite. Since the name "G4901" is not known in the art, the use of said name does not carry art-recognized limitations as to the specific or essential characteristics that are associated with that denomination. The name "G301" does not clearly identify the claimed seeds, plants, and plant parts, and does not set forth the metes and bounds of the claimed

invention. The name appears to have been arbitrarily assigned and can be changed. The specific characteristics associated therewith can also be modified. Amending claims 1, 6, and 9 to recite the ATCC deposit number in which seed of corn G4901 has been deposited would overcome the rejection.

In claim 4: there is improper antecedent basis for "protoplasts" in line 2. It is suggested that the term be removed from the claim, and that a new claim be introduced directed towards protoplasts produced from the tissue culture of claim 4.

In claim 9: the recitation "which has been deposited in the ATCC accession number X" in lines 1-2 renders the claim indefinite. It is not clear if it is the first generation hybrid corn or plant G4901 that the recitation is referring to.

In claims 10 and 11: the claims recite the recitation "the regenerable cells of the corn plant". There is insufficient antecedent basis for this limitation in the claim or the claims from which they depend.

In claim 14: the recitation "plants of inbred corn seed designated G4901 in Claim 13" in lines 2-3 renders the claim indefinite. Claim 13 is drawn to a seed that is not G4901, as it comprises a transgene, and therefore no longer expresses all of the same traits as G4901.

In claim 17: the recitation "plants of inbred corn seed designated G4901 in Claim 16" in lines 2-3 renders the claim indefinite. Claim 16 is drawn to a seed that is not G4901, as it comprises a mutant gene, and therefore no longer expresses all of the same traits as G4901.

In claim 18: the recitation "using the seed and its progeny" in line 4 renders the claim indefinite. The meaning of this recitation is not clear. The claim is also indefinite because the last step does not appear to be consistent with the preamble of the claim, which indicates that the method is for identifying G4901 seed. The steps of the method only indicate that plants that appear less robust are selected, and that they are self-pollinated.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 6-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn towards any hybrid seed produced by a method comprising pollinating plants grown from corn line G4901 with another inbred line; hybrid seed produced by crossing a plant that has as an ancestor corn plant G4901, with another inbred line, and hybrid plants grown from said hybrid seed, and tissue culture of regenerable cells of said hybrid plant;

an F1 hybrid corn plant produced by crossing G4901 with another inbred line, and preventing pollen production by one of the parents; G4901 comprising at least one transgene; seed of G4901 comprising at least one transgene; hybrid seed comprising at least one transgene, produced by hybrid combination of G4901 seed comprising at least one transgene, with another inbred line; corn plant G4901 comprising at least one mutant gene, and seed of said plant; ; hybrid seed comprising at least one mutant gene, produced by hybrid combination of G4901 seed comprising at least one mutant gene, with another inbred line; a method of identifying G4901 seed, comprising hybrid seed.

The specification describes numerous morphological and physiological traits of the maize plant arbitrarily designated G4901 (page 16, line 1 to page 23, line 9). The specification describes traits of G4901 in hybrid combinations (page 23, line 11 to page 24, line 21). The specification also indicates that seed of G4901 will be deposited with the ATCC upon issuance of a patent (page 29, lines 4-17).

However, the specification does not describe all other hybrid corn plants produced by crossing G4901 with other inbred corn plants. The descriptions of G4901 and the hybrids discussed in the specification do not provide any information concerning the description of other hybrids produced from it. The hybrid of claim 7 does not even have to have corn plant G4901 as a parent, and can be separated from G4901 by any number of generations. Such a plant may not share any traits at all with G4901.

The description of G4901 is also not indicative of any transgenic plant or G4901 plants comprising transgenes. Transgenes may be of any gene, including those that affect more than one trait, or those that are not described by the specification or the prior art. For claims 12 and

13, it is suggested that the types of transgenes contemplated in the specification be listed, provided the prior art teaches those isolated genes (such as insect resistance genes).

The description of G4901 also is not indicative of any G4901 comprising mutant genes. Such plants would have different morphological and physiological traits, and may share no resemblance to G4901 at all, and no such plant is described. Given the breadth of the claims encompassing hybrid corn plants and G4901 further comprising any transgene(s) or mutant gene(s), and lack of guidance of the specification as discussed above, the specification fails to provide an adequate written description of the multitude of corn plants and their parts encompassed by the claims.

5. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Since the claimed seed of maize plant G4901 is essential to the claimed invention, it must be obtainable by a repeatable method set forth in the specification or otherwise be readily available to the public. If the seed is not so obtainable or available, a deposit thereof may satisfy the requirements of 35 U.S.C. 112. The specification does not disclose a repeatable process to obtain the exact same seed in each occurrence and it is not apparent if such a seed is readily available to the public.

If the seeds are deposited under the terms of the Budapest Treaty, then an affidavit or declaration by the applicants, or a statement by an attorney of record over his or her signature

and registration number, stating that the seeds will be irrevocably and without restriction or condition released to the public upon the issuance of a patent would satisfy the deposit requirement made herein. A minimum deposit of 2500 seeds is considered sufficient in the ordinary case to assure availability through the period for which a deposit must by maintained.

If the deposit will not be made under the Budapest Treaty, then in order to certify that the deposit meets the criteria set forth in 37 CFR 1.801-1.809, Applicants may provide assurance of compliance by an affidavit or declaration, or by a statement by an attorney of record over his or her signature and registration number showing that

(a) during the pendency of the application, access to the invention will be afforded to the Commissioner upon request;

(b) all restrictions upon availability to the public will be irrevocably removed upon granting of the patent;

(c) the deposit will be maintained in a public depository for a period of 30 years or 5 years after the last request or for the enforceable life of the patent, whichever is longer;

(d) the viability of the biological material at the time of deposit will be tested (see 37 CFR 1.807); and

(e) the deposit will be replaced if it should ever become inviable.

Claim Rejections - 35 USC § 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-11 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maves (U.S. Patent No. 5,763,753).

The claims are broadly drawn towards any hybrid seed produced by a method comprising pollinating plants grown from corn line G4901 with another inbred line; hybrid seed produced by crossing a plant that has as an ancestor corn plant G4901, with another inbred line, and hybrid plants grown from said hybrid seed, and tissue culture of regenerable cells of said hybrid plant; an F1 hybrid corn plant produced by crossing G4901 with another inbred line, and preventing pollen production by one of the parents; G4901 comprising at least one transgene; corn plant G4901 comprising at least one mutant gene, and seed of said plant; ; hybrid seed comprising at least one mutant gene, produced by hybrid combination of G4901 seed comprising at least one mutant gene, with another inbred line; a method of identifying G4901 seed, comprising hybrid seed.

Maves teaches seed of an inbred maize line designated "ZS01262," plants produced by growing said seed, and plants and plant parts having all of the physiological and morphological characteristics of ZS01262 (col. 6, line 20 to col. 11, line 49; claims). It appears that the claimed plants and seeds of the instant invention may be the same as ZS01262, given that they exhibit similar traits, such as a green/purple glume color, bald shoots at flowering, and yellow glume

color (Table 1). Alternatively, if the claimed plants, plant parts, and seeds of G4901 are not identical to ZS01262, then it appears that ZS01262 only differs from the instantly claimed plants, plant parts, and seeds due to minor morphological variation, wherein said minor morphological variation would be expected to occur in different progeny of the same cultivar, and wherein said minor morphological variation would not confer a patentable distinction to G4901. Maves also teaches production of a tissue culture of regenerable cells from a plant of line ZS01262, wherein regenerable cells are from tissues including flowers, pollen, ovules, among others; a plant produced from tissue culture of ZS01262 that is capable of expressing all of the morphological and physiological traits of ZS01262; methods for producing hybrid seeds and plants wherein a plant of inbred line ZS01262 is crossed with another inbred corn plant, and the ensuing seed are harvested; method for producing ZS01262 inbreds comprising planting a collection of seed of ZS01262 and a hybrid, one of whose parents is ZS01262, and identifying inbred ZS01262 by decreased vigor; (col. 2, line 38 to col. 3 line 11; col. 11, line 50 to col. 14, line 46; claims). The claimed invention was *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, if not anticipated by Maves.

7. Claims 1-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maves in view of Fromm et al (Bio/Technology, 1990, Vol. 8, pages 833-839).

The claims are broadly drawn towards any hybrid seed produced by a method comprising pollinating plants grown from corn line G4901 with another inbred line; hybrid seed produced by crossing a plant that has as an ancestor corn plant G4901, with another inbred line, and hybrid plants grown from said hybrid seed, and tissue culture of regenerable cells of said hybrid plant;

an F1 hybrid corn plant produced by crossing G4901 with another inbred line, and preventing pollen production by one of the parents; G4901 comprising at least one transgene; seed of G4901 comprising at least one transgene; hybrid seed comprising at least one transgene, produced by hybrid combination of G4901 seed comprising at least one transgene, with another inbred line; corn plant G4901 comprising at least one mutant gene, and seed of said plant; ; hybrid seed comprising at least one mutant gene, produced by hybrid combination of G4901 seed comprising at least one mutant gene, with another inbred line; a method of identifying G4901 seed, comprising hybrid seed.

Maves is discussed above.

Maves does not teach plants comprising transgenes.

Fromm et al. teach the production of transgenic maize plants comprising transgenes (pages 833-838).

It would have been obvious and within the scope of one of ordinary skill in the to transform the corn line of Maves with one or more transgenes, following the method of Fromm et al. One would have obviously been motivated to introduce transgenes of interest into the plant of Maves, to improve its agronomic characteristics. It also would have been obvious to produce seed from the transgenic plant, for the purpose of propagation, and cross the transgenic plant to produce hybrid plants, to transfer the desired transgenes to other corn plants.

8. No claim is allowed.

Contact Information

Any inquiry concerning this communication from the examiner should be directed to Ashwin Mehta, whose telephone number is 703-306-4540. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays from 8:00 A.M to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at 703-306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 and 703-872-9306 for regular communications and 703-872-9307 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

September 16, 2002

ASHWIN D. MEHTA, PH.D
PATENT EXAMINER